

**REMARKS/ARGUMENTS**

**Status of the Claims**

Claims 1-60, 93-96, and 103 are pending. Claims 1, 11-20, 22, 23, 25, 28-31, 36, 38, 40, 42-44, 46, 48, 51, 54-56 and 96 are amended. Claims 26, 27, 34, 45, 57, 61-92, 97-102 have been canceled without prejudice. Claims 104-111 are newly presented. After entry of these amendments, claims 1-25, 28-33, 35-44, 46-56, 58-60, 93-96, and 104-111 will be pending.

Claims 1-6, 15, 16, 24-26, 38, and 40 stand rejected under 35 U.S.C. §102(e) as allegedly anticipated by Tao et al. (U.S. Patent No. 6,221,640).

Claims 56-60 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by Beaulande et al. (Nucl. Acids Res. 26:521-5 (1998)).

Claims 7-14, 17-23, 27-37, 39, 41-55, 93-96, and 103 were objected to depending from rejected claims, but as being otherwise drawn to allowable subject matter.

Applicants thank the Examiner for pointing out the subject matter deemed allowable and respond to the above rejections below.

**Support for the Amendments to the Claims**

Claim 1 has been amended to recite:

A method for specifically detecting a primary amino acid in a sample, said method comprising:

contacting said primary amino acid to be detected with a plurality of aminoacyl tRNA synthetases, wherein each member synthetase of said plurality differs from other member synthetases of said plurality according to the cognate primary amino acids thereof and wherein said plurality of tRNA synthetases comprises an aminoacyl tRNA synthetase cognate to said primary amino acid to be detected, and

wherein said contacting is under reaction conditions capable of forming a product with said primary amino acid to be detected, wherein said product is selected from the group consisting of the aminoacyl- tRNA synthetase:amino acid AMP complex of said primary amino acid to be detected, inorganic pyrophosphate, the aminoacyl-tRNA corresponding to

said primary amino acid to be detected, and AMP, thereby  
forming said product; and  
specifically detecting said product.

Support for the above subject matter is found *inter alia* in the previous version of the claim and original claim 17. Support for the recitals of the recited products is found in the specification *inter alia* at p. 8, paragraph 33.

Claims 14-16, 22, 25, 28 and 56 were amended to recite "product" instead of "first product" to reflect changes in the antecedent basis afforded by claim 1. Support for such subject matter is respectively found *inter alia* in the previous version of each claim.

Claims 25, 28, 29, and 30 were amended to recite "product" instead of "second product." Such amendments reflect changes in the antecedent basis for product in claim 1 and support is respectively found *inter alia* in the previous version of each claim.

Claims 18, 40, 48, and 94 were amended only to reflect changes to their antecedent basis and now recite "primary amino acid to be detected" instead of "primary amino acid." Support for such subject matter is respectively found *inter alia* in the previous version of each claims.

Claims 11 and 12 were amended to recite the composition rather than a composition according to how it was made. Support for the subject matter is respectively found *inter alia* in the previous version of each claim.

Claim 17 was amended for purposes of clarity and according to changes in the antecedents afforded by claim 1. Support for the subject matter is found *inter alia* in the previous version of the claim.

Claims 23, 28, 36 were amended to recite "spatial." Support is found *inter alia* in the previous versions of the respective claims.

Claim 24 was amended to change its dependency from claim 17 to claim 1. Support for this subject matter is found *inter alia* in the previous versions of the claim and also in paragraph 96 at p. 17.

Claim 25 was amended to set forth subject matter where the product is the aminoacyl tRNA of the primary amino acid to be detected. Support is found *inter alia* in the previous version of the claim (contacting the first product with the tRNA would form an aminoacyl tRNA, see p. 8, paragraph 33).

Claim 28 was amended to recite more specifically the tRNA subject matter thereof. Support is found in the previous version of the claim and in the specification *inter alia* at p. 8, paragraph 33 as well as in original claim 36. tRNA arrays are set forth *inter alia* in Figure 1A, and paragraphs 120 and 304 of the specification.

Claim 29 was amended to change its dependency from claim 25 to claim 28 and to match changes in the antecedent basis afforded by claim 28. Support for such subject matter is found *inter alia* in the previous version of the claim. Support is as set forth for claim 28.

Claim 30 was amended to change its dependency from canceled claim 26 to claim 28 and to match changes in the antecedent basis afforded by claim 28. Support for such subject matter is found *inter alia* in the previous version of the claim. Support is also as set forth for claim 28.

Claim 31 was amended to change its dependency from canceled claim 26 to claim 25. Claim 31 was also amended to set forth subject matter of "GTP or a GTP analog" as recited in its dependent claim 32. Support for such subject matter is found *inter alia* in the previous version of the claims.

Claim 36 was amended to change its dependency from claim 25 to claim 28. Support for the recited subject matter is found *inter alia* in the previous version of the claim.

Claim 38 was amended for to recite the product had a label subject to detection by the originally listed methods. Support for this subject matter is found *inter alia* in the previous version of the claim.

Claim 42 was amended to reflect changes in the antecedent basis afforded by claim 28. Support for this subject matter is found *inter alia* in the previous version of the claim.

Claim 43 was amended to change its dependency from claim 31 to 41 to provide the necessary antecedent basis and was amended to set forth more clearly the subject matter thereof. Support for this subject matter is found *inter alia* in the previous version of the claim.

Claims 44 and 46 were amended to change their dependencies from claim 31 to claim 41 as they related to the antecedent found in claim 41. Support for this subject matter is found *inter alia* in the previous version of the claim.

Claim 51 was amended to change its dependency from claim 3 to claim 31 which set forth the antecedent basis for the recitals of claim 51. Support is found *inter alia* in the previous version of the claims.

Claim 54 was amended to change its dependency from claim 25 to claim 28 and to set forth more clearly that the labeled aminoacyl tRNA of the primary amino acid to be detected is to be detected. Support for this subject matter flows *inter alia* from the previous version of the claim.

Claim 55 was amended to recite "aminoacyl tRNA" in place of "tRNA" Support for this subject matter flows from the previous version of the claim and amended claim 54. Claim 55 was also amended to recite "mass spectrometry." Support for this subject matter is found *inter alia* in the specification at paragraph 117.

Claim 56 was amended to recite "a plurality of spatially separated enzymatically active aminoacyl tRNA synthetases." Support for this subject matter is found *inter alia* in the specification at paragraphs 33 and 34 which describe the enzymatic properties of such enzymes.

Claim 96 was amended to change its dependency from canceled claim 26 to claim 25. Support is found *inter alia* in the previous version of the claim.

New claim 104 sets forth the 20 primary amino acids and includes a proviso. Support for this subject matter is found *inter alia* as set forth above for claim 1 and in paragraph 38.

New claim 105 depends from claim 17 and recites "mass spectrometry." Support for this subject matter is found *inter alia* at p. 23, paragraph 117.

New claim 106 depends from claim 25 and recites a labeled probe for detecting the amino acyl tRNA. Support for such is found in the specification at paragraph 124.

New claim 107 recites various labeled probes. Support for such is found in the specification at paragraph 124, last sentence.

New claim 108 sets forth amino acyl synthetase and tRNA subject for each of the 20 primary amino acids. Support for this subject matter is found *inter alia* in the specification in Figs. 1A, 3 and paragraphs 122, 126.

New claim 109 recites:

A method for specifically detecting a primary amino acid in a sample, said method comprising:  
    contacting said primary amino acid with an aminoacyl tRNA synthetase cognate to the primary amino acid to form a first product, and  
    specifically detecting said first product, whereby said primary amino acid is specifically detected; and wherein said sample is selected from the group consisting of cerebrospinal fluids, fermentation broths, proteolytic digests, cell culture media, blood, or serum.

Support for the above subject matter is found in the previous versions of claim 1 and claims 9-11 and the specification at paragraph 85.

New claim 110 recites subject matter close to that of the previous version of claim 31 as it depended from previous versions of claims 25 and 1.

New claim 111, depends from claim 56 and sets forth an array of tRNAs. Support for this subject matter is found *inter alia* in original claim 58.

In view of the above, Applicants believe the Amendments to the claims add no new matter and respectfully request their entry.

#### Claim Interpretation

A. "Biomolecular Recognition".

Without acquiescing to the position of the Examiner, the Applicants have amended the claims to delete the recital of "biomolecular recognition."

B. "Primary Amino Acid"

The term primary amino acid includes just the 20 amino acids listed on page 13, paragraph 73.

C. "Array"

Without acquiescing to the position of the Examiner, the Applicants have amended the claims to recite "spatial" with each first antecedent use of the term, "array."

Response to the Rejection of Claims 1-6, 15, 16, 24-26, 38, and 40 under 35 U.S.C. §102(e) for Alleged Anticipated by Tao et al. (U.S. Patent No. 6,221,640).

According to MPEP §213, "to anticipate a claim, the reference must teach every element of the claim."

Without acquiescing to the position of the Examiner and in order to expedite examination of the present application, Applicants have amended base claim 1 to recite in part *"contacting said primary amino acid in the sample with a plurality of aminoacyl tRNA synthetases wherein each member synthetase of the plurality is cognate to a different primary amino acid."* In accord with the similar subject matter deemed allowable by the Examiner (e.g., claims 13, 17), Applicants note that Tao et al. do not teach or suggest such subject matter wherein a primary amino acid is contacted with a plurality of aminoacyl-tRNA synthetases.

As the Tao et al. does teach each and every element of the claims, the reference can not anticipate the claims. In view thereof, Applicants respectfully request that the above rejection be reconsidered and withdrawn.

Response to the Rejection of Claims 56-60 under 35 U.S.C. §102(b) as allegedly anticipated by Beaulande et al. (Nucl. Acids Res. 26:521-5 (1998)).

Without acquiescing to the position of the Examiner and in order to expedite examination of the present application, Applicants have amended base claim 1 to recite "enzymatically active." The gels of Beaulande et al. separate denatured proteins using a 12% SDS polyacrylamide gel system (see Fig. 2). Such proteins are denatured by the 12% SDS and are not enzymatically active. I

As the Beaulande reference does teach each and every element of the claims, the reference can not anticipate the claims. In view thereof, Applicants respectfully request that the above rejection be reconsidered and withdrawn.

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Amdt. dated June 14, 2004  
Reply to Office Action of December 12, 2004


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**CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,

  
Frank J. Mycroft  
Reg. No. 46,946

TOWNSEND and TOWNSEND and CREW LLP  
Two Embarcadero Center, Eighth Floor  
San Francisco, California 94111-3834  
Tel: 925-472-5000  
Fax: 415-576-0300  
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